

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BOARD OF PATENT APPEALS AND INTERFERENCES**

Applicant: Stephen Bruck et al.

Serial No.: 10/659,147

Group Art Unit: 3636

Filing Date: September 10, 2003

Examiner: Joseph F. Edell

For: SEAT RECLINER MECHANISM INCORPORATING A ROTATABLE  
CAM CO-ACTING WITHIN AN INTERIORLY APERTURED PAWL

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**CORRECTED APPEAL BRIEF**

Mail Stop Appeal Brief  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

In response to the Notification of Non-Compliant Appeal Brief mailed June 22, 2007, Applicant submits the following Corrected Appeal Brief which has been revised in accordance with 37 CFR 41.37(c)(1)(vii). Pursuant to a telephone conference with the Examiner on July 3, 2007, the arguments regarding the rejection of claims 8 and 9 have been placed under subheadings identifying the claims by number.

**1.0 Real Party in Interest.**

The real party in interest in the present application is BAE Industries, Inc. having an address at 24400 Sherwood, Centerline, Michigan 48015, by assignment from Stephen Bruck and David Grable dated September 10, 2003 and recorded with the PTO.

## **2.0 Related Appeals and Interferences**

No other appeals or interferences are known by Applicant to be pending and which will have any effect on the Board's decision in the pending appeal.

## **3.0 Status of Claims.**

Claims 1-13 remain pending in the application and are rejected by the Examiner's Final Office Action dated April 5, 2006. All of pending claims are being appealed.

## **4.0 Status of Amendments.**

An Amendment after final rejection under 37 C.F.R. §1.116 was filed, on June 28, 2006, and contemporaneous with the filing of the Notice of Appeal. The Amendment after final was in response to the final rejection of April 5, 2006 and sought to have entered formal drawings including reference to the seat back and seat bottom (see Fig. 4 as revised) as requested by the Examiner. The amendment after final further incorporated requested revisions set forth on page 3, paragraph 2 of the Examiner's comments in the final rejection of April 5, 2006. Notwithstanding Applicant's attempt to comply with the Examiner's requests and to place the application in better form for appeal, an Advisory Action was issued on July 13, 2006 denying entry of the amendment after final.

## **5.0 Summary of Claimed Subject Matter.**

### **Claim 1.**

A seatback recliner mechanism 10 (page 4, line 12, Fig. 1) having a frame (page 5, line 2, Fig. 1) incorporated into a seat bottom and a seatback arm 28 (page 5, line 13, Fig. 1) pivotally secured to the frame. The seatback arm includes a lower arcuate surface 30 (page 5, line 13, Fig. 4) upon which are defined a first plurality of serrations 32 (page 5, line 15, Fig. 2).

A pawl 58 (page 6, line 6, Fig. 2) is hingedly secured to the frame (e.g. between spaced apart plates 12 and 14) and incorporates a second plurality of serrations 70 (page 6, line 11, Fig. 2). The pawl further includes an interior aperture defined by an enclosed inner wall configuration (see inner wall configurations established by inward projections at circumferentially spaced apart locations 72, 74 and 76, page 6, line 16, Fig. 2).

A cam 78 (page 6, line 17, Fig. 2) is rotatably secured to the frame in seating fashion within the inner wall configuration, and so as to be completely contained within the interior aperture associated with the pawl. The cam exhibits a specified exterior configuration (this including circumferentially arrayed projections 102, 104 and 106, page 7, line 11, Fig. 2).

A lever 90 (page 6, line 22, Fig. 1) pivotally secures to the cam and extends from the frame. Upon rotating the cam in a first direction, and such that its exterior configuration engages at least one location along the inner wall configuration of the pawl, a bias is created between the upper surface arrayed and second plurality of serrations associated with the pawl and in abutting contact against the first plurality of serrations associated with the rounded bottom of the seat back arm (see page 7, lines 11 et seq.). The cam is subsequently rotated in a second direction to cause the pawl to hingedly disengage from abutting contact with the seatback arm, thus allowing for pivoting movement of the seat back arm (page 8, lines 4 et seq.).

**Claim 13.**

A seatback recliner mechanism 10 (page 4, line 12, Fig. 1) having a frame including plates 12 and 14 (page 5, line 2, Fig. 1) incorporated into a seat bottom and a seatback arm 28 (page 5, line 13, Fig. 1) pivotally secured to the frame in sandwiching fashion between the plates 12 and 14. The seatback arm includes a lower arcuate surface 30 (page 5, line 13, Fig. 4) upon which are defined a first plurality of serrations 32 (page 5, line 15, Fig. 2).

A generally elongated pawl 58 (page 6, line 6, Fig. 2) is hingedly secured to the frame (e.g. between spaced apart plates 12 and 14) and incorporates a second plurality of serrations 70 (page 6, line 11, Fig. 2). The pawl further includes an interior aperture defined by an enclosed inner wall configuration (see inner wall configurations established by inward projections at circumferentially spaced apart locations 72, 74 and 76, page 6, line 16, Fig. 2).

A cam 78 (page 6, line 17, Fig. 2) is rotatably secured to the frame in seating fashion within the inner wall configuration, and so as to be completely contained within the interior aperture associated with the pawl. The cam exhibits a specified exterior configuration (this including circumferentially arrayed projections 102, 104 and 106, page 7, line 11, Fig. 2) and which coact with the first plurality of projections 72, 74 and 76 associated with the pawl 58.

A lever 90 (page 6, line 22, Fig. 1) pivotally secures to the cam 78 and extends from the frame. Upon rotating the cam in a first direction, and such that its exterior configuration engages at least one location along the inner wall configuration of the pawl, a bias is created between the upper surface arrayed and second plurality of serrations associated with the pawl and in abutting contact against the first plurality of serrations associated with the rounded bottom of the seat back arm (see page 7, lines 11 et seq.). The cam is subsequently rotated in a second direction to cause the pawl to hingedly disengage from abutting contact with the seatback arm, thus allowing for pivoting movement of the seat back arm (page 8, lines 4 et seq.).

**Claim 2.**

A second plurality of serrations 70 extending along an upper arcuate surface of the pawl extending in substantially opposing fashion relative to the lower arcuate surface of the seatback arm (page 6, lines 10-13, Fig. 2).

**Claims 3 and 4.**

The inner wall configuration of the pawl includes a first plurality of projections (see inner wall configurations established by inward projections (3) at circumferentially spaced apart locations 72, 74 and 76, page 6, line 16, Fig. 2), the exterior configuration of the cam includes a second plurality (3) of projections (this including circumferentially arrayed projections 102, 104 and 106, page 7, line 11, Fig. 2) which co-act with the first plurality of projections between the first and second rotated directions.

**Claim 5.**

The frame further including an inner plate and a spaced apart outer plate sandwiching therebetween the pawl, cam and pivotally secured seatback, see at 12 and 14, pages 5-6, Fig. 3.

**Claim 10.**

A pair of spacer bushings 16 and 18 (page 5, line 7, Fig. 3) engage additional and aligning pairs of apertures 20 & 22 and 24 & 26 in the inner 12 and outer 14 plates.

**Claim 12.**

An extending end 98 of the secondary coil spring 94 engages an angled projection 100 associated with the outer plate (see page 7, lines 1-9, Fig. 3).

Other additional features include the seatback recliner mechanism including a main pivot pin 40 (page 5, line 19, Fig. 2) extending through aligning apertures 36 and 38 (page 5, line 17, Fig. 3) in the spaced-apart inner and outer plates. A main coil spring 42 (page 5, line 20, Fig. 3) secures to an exterior face of the outer plate and biases the seatback arm in a forwardly pivoting direction.

A cam pivot pin 80 (page 6, line 18, Fig. 3) extends through a central aperture defined in the cam and additional aligning apertures 84 and 86 (page 6, one 20, Fig. 3) in the inner 12 and

outer 14 plates, an extending, slotted, end 88 (page 6, line 22, Fig. 3) of the cam pivot pin engaging the lever 90. A secondary coil spring 94 (page 7, line 2, Fig. 3) secures to an exterior face of said the outer plate 14 and biases the lever 90 in a counterclockwise direction.

A pawl rivet 64 (page 6, line 6, Figs. 2 and 3) seats through an aperture in the pawl and defines its hinged connection. The pawl rivet seats through additional and aligning apertures 66 and 68 in the inner and outer plates.

#### **6.0 Grounds of Rejection to be Reviewed on Appeal.**

The grounds for rejection presented for review are the Examiner's rejection of claims 1, 2, 5-9, 11 and 13 under 35 U.S.C. §102(b) as being anticipated by Choi (USPN 6,178,596), the rejection of claims 3 and 4 were rejected as obvious over 35 U.S.C. §103(a) over Choi in view of Yoshida et al. (USPN 5,749,624), the rejection of claim 10 under 35 U.S.C. §103 as obvious over Choi in view of Fast (USPN 6,412,849) and, finally, the rejection of claim 12 under 35 U.S.C. §103(a) as obvious over Choi.

#### **7.0 Arguments.**

##### **I. The Rejection of Claims 1, 6-9, 11 and 13 under 35 U.S.C. §102(b) as Anticipated by Choi USPN 6,178,596.**

Choi was newly cited against the above-referenced claims in the Examiner's final rejection of April 5, 2006. Choi discloses, in relevant part, an actuating portion 400 (best understood to correspond to our cam 78) which is disposed within a latch portion 300 (further best understood to correspond to our pawl 58). The latch portion 300 and interiorly positioned actuating portion 400 are sandwiched within a recess collectively defined between a pair of turning pieces 210, 210a (as best understood to correspond with our inner and outer frame members 12 and 14).

Actuation of the portion 400 (by rotation of lift actuating lever 500) by coaxing motion within the latch portion causes the latch portion 300 to vertically lift or drop and so that opposing sets of teeth (identified as gears 340 formed both on the underside of the lifting piece and upon a bottom arcuate surface 340a of the selected turning piece 210a) are selectively brought into and out of contact with each other. Seat supporting brackets 110 and 110a (see side view of Fig. 5 in Choi) are secured to upper end locations of the turning piece 210a, such as by fasteners.

Clear distinguishing differences between Applicant's claims, namely independent claims 1 and 13 include the location of the initial downwardly arrayed serrations or teeth 32, defined along the arcuate surface of the seatback 28, and which meshingly interengage with the additional serrations 70 defined (upwardly) along an exterior location of the pawl. This construction differs both structurally and functionally from that shown in Choi, since the present invention, as again set forth in claims 1 and 13, requires the pawl to "hingedly" rotate between engaging and disengaging locations established between the opposing sets of teeth 32 and 70.

In contrast, Choi requires that its latch portion 300 (or lifting plate) vertically elevate or lower (and thereby to selectively engage or separate its described gears 340 and 340a established between the bottom face of the latch portion 300 and the inner arcuate surface of the sandwiching turning piece 210a). Accordingly, the latch portion 300 in Choi is not hingedly secured to the frame and in the fashion that the pawl element 58 is both recited in the claims and illustrated in the detailed description as secured to the seat frame member 14.

**A. Rejection of Claim 8 under Choi USPN 6,178,596.**

Referencing claim 8, the elastic spring 500 evident in Choi is not secured to an exterior face of the outer plate to bias the lever in a counterclockwise direction as structurally described in the present application.

**B. Rejection of Claim 9 under Choi USPN 6,178,596.**

Further, and as to claim 9, the lifting plate/latch portion 300 in Choi incorporates no pawl rivet associated with any type of hinged connection to rotate the pawl.

Accordingly, it is respectfully submitted that the §102(a) rejection over Choi is overcome in view of the above.

**II. The Rejection of Claim 2 under 35 U.S.C. §102(b) as Anticipated by Choi USPN 6,178,596**

As to claim 2, Choi does not teach or suggest the secondary set of serrations (or gears/teeth) associated with the pawl (see as again illustrated at 70 in the present disclosure and as compared to bottom disposed gears 340 in the latch portion 300 of Choi) extending along an upper arcuate surface of the pawl and opposing fashion to a lower arcuate surface of the seatback arm.

**III. The Rejection of Claim 5 under 35 U.S.C. §102(b) as Anticipated by Choi USPN 6,178,596**

Referencing further claim 5, the frame comprising the inner and outer spaced apart plates 12 and 14 is not referenced by the seat support brackets 110 and 110a illustrated in Fig. 5 of the Choi illustrations.

**IV. The Rejection of Claims 3 and 4 as Obvious over 35 U.S.C. §103(a) over Choi in View of Yoshida.**

Claims 3 and 4 further recite the coacting pluralities (first, second and third) of projections established between the inner circumferential surface of the pawl aperture and the outer opposing surfaces of the rotatable cam element. Simply put, the latch portion 300 (roughly our pawl) and inner disposed actuation portion 400 (e.g. Choi's cam) include only a pair of points of contact (see at 420 and 420a in exploded view of Fig. 2) established at opposite upper



and lower ends of the portion 400 and which are disclosed as coating with inclined surfaces defined in upper and lower ends of the rectangular shaped hole (see column 3, lines 55, et seq. in Choi), presumably referencing the inner generally rectangular shaped configuration of the portion 300 within which the rotating portion 400 seats.

Furthermore, the slidable inner pieces 20 and 21 in Yoshida also do not include first, second and third coating locations (they rather include only two and as referenced at 31 and 32 for inner rotatable cam member 16 with and further at 33 and 34 for upper and lower sliding pieces 20 and 21, see further Fig. 1 in Yoshida).

In rejecting claims under 35 U.S.C. §103, the Examiner bears the initial burden of presenting a prima facie case of obviousness. See *In re Rijckaert*, 28 USPQ2d 1955, 1956 (Fed. Cir. 1993). A prima facie case of obviousness is established by presenting evidence that the reference teachings would appear to be sufficient for one of ordinary skill in the art having the references before him to make the proposed combination or modification. See *In re Litner*, 173 USPQ 560, 562 (CCPA 1972).

The conclusion that the claimed subject matter is prima facie obvious must be supported by evidence, as shown by some objective teaching in the prior art or by knowledge generally available to one of ordinary skill in the art that would have led that individual to combine the relevant teachings of the references to arrive at the claimed invention, see again *In re Fine*, 837 F.2d 1071, 1074, 5 USPQ2d, 1596, 1598 (Fed. Cir. 1988).

Rejections based on §103 must rest on a factual basis with these facts being interpreted without hindsight reconstruction of the invention from the prior art. The Examiner may not, because of doubt that the invention is patentable, resort to speculation, unfounded assumption or hindsight reconstruction to supply deficiencies in the factual basis for the rejection. Rather, and

when satisfying the burden of showing obviousness of the combination, the Examiner can show some objective teaching in the prior art or knowledge generally available to one of ordinary skill in the art which would lead that individual to combine the relevant teachings of the references. *In re Lee*, 61 USPQ2d 1430, 1434 (Fed. Cir. 2002), citing *In re Fritch*, 23 USPQ2d 1780, 1783 (Fed. Cir. 1992). Broad conclusory statement regarding the teaching of multiple references, standing alone, are not “evidence”; *In re Dembiczak*, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999). Mere denials and conclusory statements, however, are not sufficient to establish a genuine issue of material fact. *Dembiczak*, 50 USPQ2d at 1617, citing *McElmurry v. Arkansas Power & Light Co.*, 27 USPQ2d 1129, 1131 (Fed. Cir. 1993).

Applying the above analysis, it is submitted that the provision of the three respective points of contact, established at circumferential opposing locations between the pawl and cam as recited in claims 3 and 4 and which permit coaxial motion of the pawl in a hinged fashion about its pivot point 62 and as opposed to linear motion as required by the latch portion 300 in Choi, is not shown by either Yoshida or Choi, either individually or collectively.

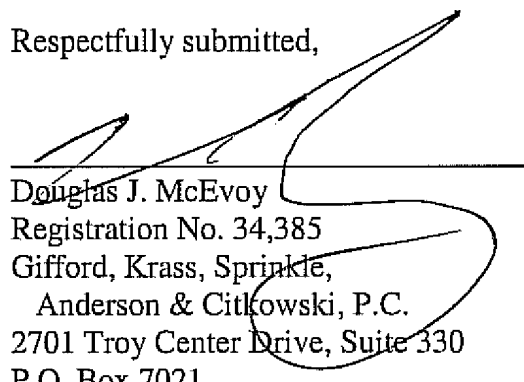
**V. The Rejection of Claim 10 under  
35 U.S.C. §103(a) as Obvious over Choi in View of Fast.**

Fast discloses spacer bushings established between inner and outer spaced apart support plates associated with a seat frame structure. However, Fast does not teach or suggest a pawl and cam arrangement as set forth in claims 1 and 13, either individually or in combination with Choi. Furthermore, the housing construction of Choi (reference again being made to the side profile view of Fig. 5) does not otherwise teach or suggest combining the spaced apart support plate and bushing structure of Fast, and such that claim 10 would be obvious.

**VI. The Rejection of Claim 12 as Obvious under 35 U.S.C. §103(a) over Choi.**

As previously referenced in discussion of claim 8, the elastic spring 510 in Choi reference does not secure to an outer plate such as illustrated and claimed in the present application.

Respectfully submitted,



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**CLAIMS APPENDIX**

1. A seatback recliner mechanism, comprising:
  - a frame incorporated into a seat bottom and a seatback arm pivotally secured to said frame;
  - said seatback arm including a lower arcuate surface upon which are defined a first plurality of serrations;
  - a pawl comprising a generally elongated body including a first end hingedly secured to said frame and incorporating a second plurality of serrations, said pawl further includes an interior aperture defined by an enclosed inner wall configuration;
  - a cam rotatably secured to said frame in seating fashion within said inner wall configuration and so as to be completely contained within said interior aperture associated with said pawl, said cam exhibiting a specified exterior configuration;
  - a lever pivotally secured to said cam and extending from said frame; and
  - said cam being rotated in a first direction, such that its exterior configuration engages at least one location along said inner wall configuration of said pawl and to bias said second plurality of serrations in abutting contact against said first plurality of serrations, said cam being rotated in a second direction to cause said pawl to hingedly disengage from abutting contact with said seatback arm.
2. The seatback recliner mechanism as described in claim 1, said second plurality of serrations extending along an upper arcuate surface of said pawl extending in substantially opposing fashion relative to said lower arcuate surface of said seatback arm.

3. The seatback recliner mechanism as described in claim 1, said inner wall configuration of said pawl comprising a first plurality of projections, said exterior configuration of said cam comprising a second plurality of projections which co-act with said first plurality of projections between said first and second rotated directions.

4. The seatback recliner mechanism as described in claim 3, each of said pawl and cam further comprising first, second and third co-acting projections.

5. The seatback recliner mechanism as described in claim 1, said frame further comprising an inner plate and a spaced apart outer plate sandwiching therebetween said pawl, cam and pivotally secured seatback.

6. The seatback recliner mechanism as described in claim 5, further comprising a main pivot pin extending through aligning apertures in said spaced-apart inner and outer plates, a main coil spring securing to an exterior face of said outer plate and biasing said seatback arm in a forwardly pivoting direction.

7. The seatback recliner mechanism as described in claim 5, further comprising a cam pivot pin extending through a central aperture defined in said cam and additional aligning apertures in said inner and outer plates, an extending end of said cam pivot pin engaging said lever.

8. The seatback recliner mechanism as described in claim 7, further comprising a secondary coil spring secured to an exterior face of said outer plate and biasing said lever in a counter-clockwise direction.

9. The seatback recliner mechanism as described in claim 5, further comprising a pawl rivet seating through an aperture in said pawl defining said hinged connection, said pawl rivet seating through additional and aligning apertures in said inner and outer plates.

10. The seatback recliner mechanism as described in claim 5, further comprising a pair of spacer bushings engaging additional and aligning pairs of apertures in said inner and outer plates.

11. The seatback recliner mechanism as described in claim 6, further comprising an extending end of said main coil spring engaging a projecting end of a rivet extending between top rear locations associated with said inner and outer plates.

12. The seatback recliner mechanism as described in claim 8, further comprising an extending end of said secondary coil spring engaging an angled projection associated with said outer plate.

13. A seatback recliner mechanism, comprising:

a frame incorporated into a seat bottom, said frame including an inner plate and a spaced-apart outer plate, a seatback arm sandwiched between said inner and outer plates and so as to be pivotally secured to said frame;

said seatback arm including a lower arcuate surface upon which are defined a first plurality of serrations;

a pawl comprising a generally elongated body hingedly secured to said frame and incorporating a second plurality of serrations extending along an upper arcuate surface in substantially opposing fashion relative to said first plurality of serrations, said pawl further includes an interior aperture defined by an enclosed inner wall configuration exhibiting a first plurality of projections;

a cam rotatably secured to said frame in seating fashion within said inner wall configuration and so as to be completely contained within said interior aperture associated with said pawl, said cam exhibiting a specified exterior configuration exhibiting a second plurality of projections which co-act with said first plurality of projections associated with said pawl;

a lever pivotally secured to said cam and extending from said outer plate; and

said cam being rotated in a first direction, such that its exterior configuration engages said inner wall configuration of said pawl and to bias said second plurality of serrations in abutting contact against said first plurality of serrations, said cam being rotated in a second direction to cause said pawl to hingedly disengage from abutting contact with said seatback arm.

**EVIDENCE APPENDIX**

No new evidence is being entered and relied upon in the appeal.



**RELATED PROCEEDINGS APPENDIX**

No copies are enclosed of any decisions rendered by a court or the Board in any proceeding identified in the related appeals and interferences section.